

CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A graphics system, including:

a main processor;

a graphics coprocessor having an embedded frame buffer;

a main memory on a separate chip from said graphics coprocessor;

a copy pipeline on said graphics coprocessor which transfers data from the embedded frame buffer to said main memory;

wherein the copy pipeline converts the data from one format to another format after reading the data from the embedded frame buffer and during transfer of the data from the embedded frame buffer to the main memory.

2. (Cancelled).

3. (Previously Presented) The graphics system of claim 1, wherein the copy pipeline is operable to selectively transfer the data to either a display buffer or a texture buffer within said main memory.

4. (Previously Presented) The graphics system of claim 3, wherein the copy pipeline converts the data to a display format if the data is transferred to the display buffer and a texture format if the data is transferred to the texture buffer.

5. (Previously Presented) The graphics system of claim 3, wherein the graphics system further includes a graphics pipeline, wherein the graphics pipeline is operable to use the data in the texture buffer during a rendering process.

6. (Previously Presented) The graphics system of claim 1, wherein the copy pipeline selectively reads data from the embedded frame buffer in RGB color format or YUV color format.

7. (Previously Presented) The graphics system of claim 6, wherein the copy pipeline converts the data from the embedded frame buffer to either a display format or a texture format.

8. (Previously Presented) The graphics system of claim 7, wherein, when the data is converted to a display format, the copy pipeline writes the data to a display buffer, and when the data is converted to texture format, the copy pipeline writes the data to a texture buffer.

9. (Cancelled)

10. (Previously Presented) The graphics system of claim 6, wherein the copy pipeline selectively converts the data read from the embedded frame buffer to a YUV color format or an RGB color format.

11. (Previously Presented) The graphic system of claim 10, wherein the copy pipeline converts the data to a YUV format if the data is intended for display.

12. (Previously Presented) A method of transferring data from a graphics chip to a main memory of a graphics system that is provided on a separate chip from said graphics chip, including:

storing image data in an embedded frame buffer of the graphics chip;

initiating a copy out operation for transferring data from the embedded frame buffer to the main memory of the graphics system;

converting the data from one format to another format during the copy out operation between the embedded frame buffer and main memory of the graphics system;
and

writing the converted data to the main memory of the graphics system.

13. (Previously Presented) The method of claim 12, wherein the converting step converts the data from RGB color format to YUV color format.

14. (Previously Presented) The method of claim 12, wherein the converting step includes converting the data from YUV color format to RGB color format.

15. (Previously Presented) The method of claim 12, wherein the converting step includes converting the data to a texture format, and the writing step includes writing the texture format data to a texture buffer.

16. (Previously Presented) The method of claim 12 wherein the converting step includes converting the data to a display format, and the writing step includes writing the display format data to a display buffer.

17. (Previously Presented) The method of claim 16 wherein the display format is a YUV 4:2:2 format.

18. (Previously Presented) The method of claim 12 wherein the writing step includes selectively writing the data to either a display buffer or a texture buffer in the main memory of the graphics system.

19. (Previously Presented) The method of claim 12, further including performing a scaling operation on the data prior to writing the data to the main memory of the graphics system.

20. (Previously Presented) The method of claim 12, further including performing a gamma correction operation on the data prior to writing the data to the main memory of the graphics system.

21. (Previously Presented) The method of claim 12, further including performing an anti-aliasing operation on the data prior to writing the data to the main memory of the graphics system.

22. (Previously Presented) The method of claim 12 further including performing a de-flickering operation on the data prior to writing the data to the main memory of the graphics system.

23. (Previously Presented) The method of claim 12, wherein the converting step includes performing at least one of the following conversions:

- RGB color format to another RGB color format;
- YUV color format to another YUV color format;
- RGB color format to YUV color format; and
- YUV color format to RGB color format.

24. (new) In a pipelined architecture graphics system having an embedded frame buffer, the frame buffer memory instantiated on a same semiconductor chip substrate as at least a portion of a graphics processing pipeline, and an external frame buffer in a main memory of said graphics system configured on one or more semiconductor chips separate from said graphics processing pipeline, wherein pixel data is copied from said embedded frame buffer memory to said external frame buffer for displaying on a monitor, a copy pipeline process that performs predetermined selected pixel data conversion and/or correction operations during transferring of pixel data from said embedded frame buffer to said external frame buffer, comprising:

selecting a sub-region of pixels in the embedded frame buffer as a source for a pixel data transfer operation, then selectively performing one or more of the following operations on pixel data selected for transfer from said embedded frame buffer to said external frame buffer:

antialiasing and/or deflicker filtering using pixel data sample from one or more rows of pixel data stored in said embedded frame buffer;

gamma correction of pixel data stored in said embedded frame buffer;

converting pixel data stored in said embedded frame buffer in RGB format to YUV format;

scaling the vertical display size of pixel data stored in said embedded frame buffer; and

selecting a destination in the external frame buffer for the pixel data transfer operation.